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U. S. DEPARTMENT OF AGRICULTURE

REPORT OF COMMITTEE ON INSTRUCTION IN AGRICULTURE, HOME ECONOMICS,
AND MECHANIC ARTS,

Made at the Annual Convention of the Association of Land-Grant Colleges,
Washington, D. C., November 13, 1924

Short Courses in Agriculture, Home Economics, and Mechanic Arts

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On the recommendation of the Committee on College Organization and Policy the Executive Body of the Association of Land-Grant Colleges requested the Committee on Instruction in Agriculture, Home Economics, and Mechanic Arts "to study the aims, character, duration and present status, proposed development, and changes of the short courses offered at the land-grant institutions." (See Proceedings of Association of Land-Grant Colleges, 1923, p. 456) With the aid of the Division of Agricultural Instruction of the United States Department of Agriculture, the committee has been able to have an examination made of the catalogues of these colleges with reference to the short courses offered, together with the compilation of replies from most of the colleges to a questionnaire sent out by the chairman of the committee. In addition to the topics suggested by the executive body, the committee added two other topics, one asking for the subjects in which short courses are offered and the other for comments or suggestions which might be helpful to the committee in making the study. The information thus obtained shows a great variety in the number, length, and character of the short courses offered by these colleges. The terminology used in describing these courses is also varied and confusing.

Some of the replies to the questionnaire were of such a character as to be of little value to the committee in making the study, but a large number of excellent returns were received showing that considerable pains had been taken to answer fully and carefully the questions asked. Obviously, considerable interest has been manifested in the study. In assembling the information, the committee has found evidence indicating that some of the land-grant institutions feel that short-course programs are in need of revision to meet present-day needs. Much of the old type of short-course work formerly done by the regular teaching staff and sometimes by research workers at these institutions is now performed by the extension workers.

The short courses offered by the extension group are sometimes held at the institutions and other times at different centers in the State. There appears to be a general feeling that the nature of extension work is such as to obviate the need of much of certain kinds of short-course work formerly offered at the institutions. The county agents or farm advisers, with the assistance of specialists in certain lines, are helping the farmers solve many of their problems and are, therefore, lessening the demand on the institutions for short courses of general character. On the other hand, the great spread of the extension work of the colleges has undoubtedly led to a greater demand for short-course work of a special character. Many persons who have been awakened by the benefits conferred on them through the extension work have desired in some way to get more instruction from the college along special lines. Several of the institutions report that courses in general

agriculture have been discontinued due to a wider diversity of agriculture and also to the fact that there have been little or no demands for such courses. Those short courses which pertain to special units of instruction in agriculture, home economics, and mechanic arts, such as butter making, millinery or gas-engine operation, are most in demand and are the courses many of the institutions are now emphasizing.

In reviewing statements of catalogues and the replies to the questionnaire it was found that 45 of the institutions offer short courses in agriculture, 22 in home economics and 24 in mechanic arts, varying in length from one day to three years. The questionnaire was sent to the three divisions in each of the land-grant institutions, and 47 replies were received from agriculture, 41 from home economics and 46 from mechanic arts. Of these numbers, 44 reported short courses in agriculture, 22 in home economics, and 31 in mechanic arts. It will be noted that the number of short courses as stated in the catalogues is not identical with that reported in the questionnaire, but this slight difference may be due to the difficulty in distinguishing between certain types of short courses, extension conferences, and the like.

The catalogues show that 14 institutions offer short courses in agriculture of from one to four years. Only 4 of the institutions designate short courses in agriculture in terms of months; whereas 30 designate them in terms of weeks, the length of such courses extending from 1 week to 22 weeks. Only 6 of the institutions designate agricultural short courses in terms of days, the length varying from 1 to 10 days. A considerable number of the institutions refer to short courses as of 5 months each for 2 years, or 2 weeks each for 2 years or 6-1/2 months each for 2 years. Several institutions do not make this point clear.

In general, the short-course work in agriculture has had a longer history and been more elaborately and frequently developed than the similar work in home economics or mechanic arts. These agricultural courses are either somewhat general or deal with some agricultural specialty. Sometimes they are given to adults and sometimes to children of high school age or younger. In some cases definite entrance requirements are made, particularly to those courses of longer duration, but much more generally there are no such requirements. In some institutions the courses of high-school grade of two or three years' duration are organized as schools of agriculture. In some cases where courses of from one to three years are offered, at least a part of the work is carried on in connection with the regular four years' course. In the shorter courses, the work often consists of lectures, with perhaps some field or laboratory observations by the students; in other cases the students take an active part in field or laboratory operations. The courses varying from 2 to 10 days are often essentially conferences, but not usually so designated, at which there may be discussions and observations on a variety of subjects, but very little, if any, systematic instruction. They are chiefly inspirational and informative and often seem to be intended primarily to acquaint the persons in attendance with the equipment and general character of the work of the institution and to inform them what aid the institutions can give them at their homes or if they attend the regular courses at the college.

Of the 22 land-grant institutions offering short courses in home economics only four report one-year and two-year courses. More than half report weeks' courses, varying in length from 1 to 13 weeks. Three institutions mention days' courses, varying in length from 1 to 10 days. A limited number of the institutions refer to farm-week short courses, where women attend home economics short courses while the men attend short courses in agriculture. Home economics courses in some institutions give considerable attention to girls' club work. One of the institutions reports that one aim of short courses is to strengthen and standardize club work and to stimulate interest by offering prizes and educational trips to winners in girls' club work. Much of this type of work is primarily of an inspirational nature and, according to statements from one institution, is designed to acquaint the young people of the State with the opportunities to obtain educational advantages offered at the land-grant institutions. The short courses likewise give farm women opportunity to spend some time in study and recreation at the institution. There is a tendency for short-course work in home economics, like agriculture, to depart from the early custom of general courses. The specialized type of short course, consisting of detailed instruction in certain units of work in which women are interested seems to be receiving greater emphasis than any other kind. Some of the larger land-grant institutions do not offer short courses in home economics because of the increase in number of four-year college students and the lack of sufficient appropriation to permit the employment of additional teaching force for short-course work. However, one institution states that it is the plan to reinstate the short courses in home economics as soon as conditions and funds will permit.

Mechanic-arts short courses probably cover a broader list of subjects than either agriculture or home economics. Of the 31 institutions reporting short courses in mechanic arts, 7 report courses of from one to two years in length. Approximately two-thirds of the institutions reporting give the length of short courses as 1 week to 15 weeks. Three report short courses of 1 to 10 days.

The returns show conclusively that many of the institutions are giving considerable attention to short courses in mechanic arts. Some of the reports are more or less general, but a large number are rather definite. A considerable amount of the short-course work, as would naturally be expected, related to agricultural engineering and the special units such as tractor repair and operation, gas engines, and blacksmithing. Short courses in mechanic arts are sometimes given under the direction of the college of agriculture and sometimes under the direction of the college of engineering. While most of this type of work is carried on at the colleges, a considerable amount is conducted in the form of extension courses at different centers within the States. Here, again, the committee has found it difficult to distinguish between regular short courses offered at the institution and those in the form of extension courses conducted away from the college. There is ample evidence to show that the short courses in mechanic arts, whether offered at the institution or otherwise, are conducted in the form of special units such as the metermen course, plumbing, carpentry, and auto mechanics. This method of organizing short courses is commendable, as it affords ample opportunity to those who desire to attend such courses for training in certain specific fields.

The aims of the short courses are variously defined in the college catalogues and in the replies to the committee's questionnaire, but essentially they seem to be comprised in one or more of the following statements: (1) To prepare persons not in school to engage in agricultural pursuits, home making, or industrial occupations; (2) to increase the knowledge and improve the practices of people now engaged in agriculture, home making, or mechanic arts; and (3) to inform those who attend short courses at the land-grant colleges as to the personnel, equipment, and other facilities of the institutions for aiding them when they return to their homes and engage in their various occupations.

There are those in the land-grant institutions who feel that considerable inconvenience is put upon regular college teachers who have to assume duties connected with short courses in addition to their regular courses. Not only the individuals but the departments have felt these hardships where an extra teaching force has not been provided. One reporter doubts whether the benefit of this extra work to the State justifies the interference with the collegiate teaching work. One institution feels that the cost per capita of short-course work is very high as compared to the four-year work. If the work is done by special instructors it should be very satisfactory, but if done by the regular four-year instructors it is not likely to be as well adapted to the need of the students. A considerable number of the land-grant institutions are employing special directors of short-course work. This is a good plan, since this office has more time and can use special efforts to make short-course life at the institutions more interesting and also more profitable. Short courses should be so well planned and so thoroughly organized in every detail that the students' time will be profitably spent. If these students are not properly disciplined and kept busy, the institutions are at fault. There is no reason why short-course students should demoralize the discipline of the colleges. Short-course students have interests separate and distinct from the regular students when the length of the course will permit. Student activities, such as athletic teams, music, clubs, games, motion pictures, and other entertaining feats, and judging contests, should be promoted for the best interest of the group. When short courses are held they should give good return for the time and effort spent and should result in bringing the institution and the faculty in closer touch with a larger group of the people of the State.

From a careful study of the content of short courses offered in agriculture, home economics, and mechanic arts, based on information obtainable, the committee is aware of the wide disparity in the amount of time devoted to short-course work. The information received does not disclose the cause of this difference. Each of the land-grant institutions has its particular field of service and is best qualified to determine local problems and to administer in their solution. It is, therefore, the duty of each institution to determine for itself the extent to which it is rendering the service most needed by the people of the State.

The character and variety of the short-course work are evidently being affected by present day educational movements of various kinds. There is, for example, a wide spread feeling that the large investment of funds in the buildings, equipment, and faculties of the colleges is not justified unless the plant and personnel of these institutions are being used to the fullest extent. Then there is the prevalent notion that mature persons engaged in particular pursuits are greatly benefited by even a short stay at the institutions where they may receive intensive instruction or information from experts. Thus we have what are called unit courses of various kinds for doctors, teachers, butter makers, poultrymen, fruit growers, automobile chauffeurs, metermen, plumbers, and home makers.

The recent studies in educational psychology, which seem to call for new classifications of students according to their actual mental ability, are raising new questions regarding variety, character, and length of courses which the colleges should offer. Professor Seashore in an address before the Society for the Promotion of Engineering Education, which was published in "Science" October 10, 1924, sets forth his view of this matter as follows:

"The extension of the type of training represented by engineering should be varied in proportion to, first, the needs of society, and, second, the capacity of students for training. If this is true, other natural finishing levels than that set for the professional courses should be provided, some longer and some shorter. Corresponding to the various departments of engineering there should be junior engineering courses (not necessarily by that name), preferably of two years of a combined trade and cultural character leading to a certificate which would motivate our skilled tradesmen who are reasonably educated for democracy. The automobile mechanic, the head carpenter, the plumber, the road builder and the hundreds of others who now face the alternative of four years or nothing, or a part of four years and disgrace, should in this school find the greatest opportunity that has ever yet been offered for the training of intelligent leadership among tradesmen.

"I know there is a skeleton in the closet, but the situation must have an airing, for if we are going to extend higher education for democracy, it can not be done by merely increasing the standard professional group. We must provide other outlets which shall enjoy the favor of occupational sanction. This is different from the ordinary trade school or manual training high school. It is trade education as a part of higher education. I would have these students take the so-called classical high-school course and acquire scientific foundations for trade skill at the college level.

"While such a trade school will probably be independent of the engineering school, the latter must function sympathetically in launching and sponsoring the former, and in the development of a good concept of education for skill in applied sciences beyond the high-school level, particularly in promoting its certification."

If Professor Seashore is right in his views of the place of trade education in the colleges, the same ideas are applicable to education in agriculture and home economics.

Demands from various sources for temporary assistance through short courses come to the colleges from time to time, and compliance with them is sometimes unavoidable. For example, the enactment of State laws requiring the teaching of agriculture or home economics in the elementary schools has made it necessary for certain land-grant colleges to institute special summer courses for teachers. The work of these colleges in the rehabilitation of World War soldiers is another instance of this kind.

In a more general way the movement for vocational education has grown so rapidly in recent years that it has greatly outrun the establishment of special educational agencies for such education. Thus it has happened that though there are now many more secondary schools in which agriculture, home economics, and mechanic arts are being taught, the demand for short courses in these subjects in the colleges has continued. However, it is questionable whether the colleges themselves have sufficiently taken into account the spread of these vocational secondary schools and have sufficiently limited or reorganized their short-course work to meet the new conditions in the secondary schools. Some believe that the vocational short course need in some States is being met by the National Vocational Education or Smith-Hughes Act. This development is raising the question whether colleges which are maintaining so-called schools of agriculture should continue or whether their work can now be assigned to the high schools teaching agriculture under the provisions of the National Vocational Education Act.

Another set of problems which have relation to the short-course work of the colleges has to do with the development of research and graduate work. It is now generally realized that institutions for higher learning can not afford to restrict or hinder their development as agencies for the advancement of knowledge and the training of investigators and teachers. On the other hand, where results of practical value come out of their researches it is unfortunate if they are not in a position to give the instruction that will make these results speedily and satisfactorily available to those who can make good use of them.

It is evident that since the range of the legitimate demands on the land-grant institutions for research, resident teaching, and extension work is increasing with the years the necessity for a careful study of these demands and an adjustment of the work of the individual institution with reference to the demands according to their relative importance and the available equipment, personnel, and means at the disposal of the institution was never greater than it is today.

The committee is persuaded that it is the primary and essential duty of the land-grant colleges to carry on undergraduate courses of standard grade leading to bachelor's degree. It has also been expected from the beginning, as is indicated in the Land-grant Act of 1862, that the land-grant colleges would conduct investigations to advance knowledge. They ought, therefore, to conduct in the most efficient manner such experimental inquiries as they undertake. They have assumed definite obligations under Federal and State laws to conduct extension work in agriculture and home economics in a large way. They have a certain equipment, personnel, and means for these lines of work, and nothing should interfere with their making the best use of their resources for these purposes.

If, in addition, their general or any special resources can be efficiently and profitably used for what are properly called short courses of resident instruction and these courses are well organized and administered they will be rendering a valuable educational service. It is believed that the demand for short courses will continue to increase and that the present-day outlook in education favors the use of such courses. It is hoped therefore that the colleges will be able to make a satisfactory adjustment of personnel and means to conduct the short courses in a reasonable way. But it will evidently require conscious and active effort to keep them in their right place as related to the other activities of the colleges.

To clarify what is now evidently a confused condition the committee suggests that the colleges formulate and adopt a standard definition of short courses and as far as possible, uniform designations regarding their duration and character. As an aid in this direction the committee makes the following propositions:

- (1) A short course is a course of systematic instruction in a given subject or group of subjects of shorter duration than a four-year college course and not leading to a degree. Obviously a course of systematic instruction can not be given in a few unrelated lectures within a period of a few days.
- (2) Extension meetings, farmers' weeks, and similar meetings for a few days, having a miscellaneous program and no really systematic instruction, should not be called short courses but conferences or institutes.
- (3) Short courses may be classified according to their duration as years' courses, months' courses, or weeks' courses and should be designated by their duration rather than by the general term, "short course." For example, instead of announcing a short course in dairying, occupying six weeks, the college should announce a six-weeks course in dairying.
- (4) Full consideration should be given by the colleges to whatever informational or instructional work is being done by their extension departments, by the special secondary schools, or by the ordinary high schools, and they should so limit and organize short courses as to give them a definite place in the college program without duplicating the work of other agencies.
- (5) The colleges should plan to give up short courses of regular secondary grade, whether organized as schools or not, as soon as there are other agencies prepared to do this work.

(6) It is doubtful whether the colleges should continue to offer one to three-years courses in general agriculture, home economics, or mechanic arts. As far as the committee has been able to ascertain these are usually not successful as separate enterprises in the college program, and the demand for such courses appears to be decreasing. It would be better to let properly qualified students enter the regular college classes as special students and leave them at certain periods whenever definite units of instruction have been completed. In such cases there can be little objection to the college giving a statement to the student of what he has accomplished during his residence at the institution.

(7) Short courses should as a rule be confined to special subjects and should be organized for persons not less than 18 years of age, as far as practicable in units, each of which may be taken separately by the student according to his option.

(8) Since short courses should be planned more particularly for persons engaged or who are expecting to engage in farming, home making, some vocation in mechanic art, or other definite pursuit, and the number of such courses to be offered by individual institutions must necessarily be limited, each college should carefully determine the conditions of agriculture and industries in its State in relation to the need for such courses and the ability of the college to supply that need and make its schedule of short courses on that basis. Sometimes a college has encouraged certain industries by its short courses when a more careful study would have shown that such industries had little chance of success in the region of the college.

(9) The special units or enterprises in agriculture, home economics, and mechanic arts should be clearly defined after studies and analyses have been made of each to determine what the jobs in each enterprise are and the fundamental knowledge and skill one who desires to follow a vocation in any of these fields should have.

(10) The analyses should consist of making a detailed study of the job-unit operations of enterprises such as poultry and swine for agriculture; millinery, meal planning, and preparation for home economics; and gas metering, plumbing, or tractor operation for mechanic arts.

(11) In making the analyses close contact with those engaged in the practical application of these jobs might be maintained to advantage. For example, it is advisable to confer with the successful poultryman regarding the fundamental jobs in conducting a poultry enterprise. Likewise, the successful home maker, plumber, or carpenter might be interviewed for information regarding his particular enterprise.

(12) Colleges in regions having diversified industries conducted under similar conditions would do well to confer with one another with reference to arranging a common program for short courses in accordance with which each college will do what it can do best and encourage students to go where they will find what best meets their particular needs.

(13) Short courses that can be most effectively conducted away from the college either by the college or by other properly coordinated educational agencies should be encouraged. They are less expensive for students, who can reside at home, and often enable the use of better facilities of a practical character than are available at the college.

(14) Short courses should be distinctly vocational in their nature with the major emphasis placed upon the practical and the minor emphasis upon the theoretical.

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APPENDIX

The information assembled in reference to this study of the short courses offered by the land-grant colleges was obtained from catalogues and replies to the questionnaire sent to each of these institutions. Forty-seven replies were received from agriculture, 42 from home economics, and 46 from mechanic arts. Forty-six colleges report short courses in agriculture, 23 in home economics, and 31 in mechanic arts. Some of the returns are very definite and give considerable information regarding the subjects in which short courses are offered while others are rather general and more or less vague.

Subjects

The replies received from the land-grant institutions show a variety of short courses offered in each of the three divisions. The short course subjects in agriculture are largely determined, as might be expected, by the kind of agricultural practices common in the State. Some States have more or less specialized types of agriculture, and in such States the short courses are influenced by these conditions. A small group of States offer no short courses in agriculture, except such as are offered in connection with farmers' week or in two or three day conferences.

Short courses in mechanic arts appear to be determined generally by the industrial interests of the State and also by the extent to which various kinds of improved farm implements are used. There is perhaps less variation of short-course subjects in home economics than in either agriculture or mechanic arts.

The subjects in which short courses are offered in agriculture, home economics, and mechanic arts have been tabulated from the information received in reply to the questionnaire sent to these divisions in each of the land-grant colleges, supplemented by information obtained from catalogues. Attention is, therefore, called to the following outline:

Subjects of Short Courses in Land-Grant Institutions

State	Agriculture	Home Economics	Mechanic Arts
Alabama	Animal husbandry- Feeding and management of beef cattle Dairying	Home demonstration club girls and women Leadership training	Farm mechanics Architecture Radio Applied electricity Auto mechanics Machine shop
Arizona	Farm and home week Short courses	None offered	None offered

Subjects of Short Courses in Land-Grant Institutions (Cont'd)

State	Agriculture	Home Economics	Mechanic Arts
Arkansas	Farmers' week		Electrical and mechanical engineering
California	Poultry husbandry Deciduous fruits Veterinary practitioners Dairy industry Canners' course Conferences Viticulture Livestock breeders Wool growers Almond growers Apricot growers Prune growers Pear growers Marketing	None offered	Agricultural engineering - (1) selection, (2) repair, and (3) operation of farm machinery Tractors, motors, and the like Farm-building construction - installing farm lighting and water systems Operations of irrigation or domestic pumps together with efficient testing of pumps
Colorado	General farming Stockmen Poultry men Beekeepers Gardeners Courses for rural teachers of agriculture	Home economics (No details of courses given)	Mechanic arts (No details of courses given)
Connecticut	Dairying Horticulture Grading, packing, and marketing of apples Pruning and spraying Livestock Poultry Conferences Fertilizer dealers Seed dealers Feed dealers Ice-cream dealers	None offered	Operation of milk plants and ice-cream factories, mechanic refrigeration, Pasteurization, bottling, and the like
Delaware	Truck crops Poultry Fruit	None offered	None offered

Subjects of Short Courses in Land-Grant Institutions (Cont'd)

State	Agriculture	Home Economics	Mechanic Arts
Florida	: Livestock : Farm crops : Citrus and sub-tropical : fruits : Poultry : Beekeeping : Nut culture : Small fruits	: Girls' home-demon- : stration club work: : Home-demonstration : work for farm : women	: None offered
Georgia	: Farmers' week : Poultry : Horticulture : Agricultural education	: Home making : Cookery : Millinery : Problems in feeding: : the family : Home planning : Health : Pattern designing	: Agricultural en- : gineering
Idaho	: Farm crops : Soils : Animal husbandry : Dairy husbandry : Poultry husbandry : Horticulture : Ranger course	: None offered	: Agricultural en- : gineering : Drafting : Shop work
Illinois	: Agriculture (general) : Intensive courses in: : Animal husbandry : Poultry : Dairying : Farm crops : Soils : Farm management : Horticulture : Week for county advis- : ers and Smith-Hughes : teachers	: None offered	: Farm mechanics : Electric meter men : Gas meter men : Ceramic engineering : Highway engineering : Plumbing and heating

Subjects of Short Courses in Land-Grant Institutions (Cont'd)

State	Agriculture	Home Economics	Mechanic Arts
Indiana	Soils and crops Farmers' week Animal husbandry Dairy manufacturing Poultry Dairy production Beekeeping	Home-makers' course	Tractor Telephone practice Road building Electric meter men Steel treating Foreman teacher training
Iowa	Farm crops and soils Horticulture Animal feeding and breeding Dairying Poultry Veterinary medicine Butter making Farm management Beekeeping Entomology Forestry Botany	Nutrition and dietetics Applied design-textile design Costume design Garment construction Millinery House planning and furnishing Principles of cookery Meal planning and preparation Marketing Food preservation Home management Home equipment Home recreation Child training Home pottery Practical lessons in household problems	Electrical work Road making Structural work Mechanical engineering Auto mechanics Special drafting Telephone operating Painting and decorating Bottling of carbonated beverages Radio operation and construction Testing and repairing meters Clay-products Manufacturing and the like Farm machinery
Kansas	Soils and fertilizers Poultry Fruit growing Commercial creamery Wheat and flour testing Grain crops Dairy herdsmen Beef-cattle herdsmen Farm business Cream-station operator Farm management Marketing Injurious insects Rodents	Housekeepers' course Cookery Sewing Hygiene Floriculture Design in the home and in clothing and housewifery	Automobile operation and repair Blacksmithing Foundry practice Automobile operation Carpentry Machine shop Tractor operation Electrical repair and construction Electric meter men

Subjects of Short Courses in Land-Grant Institutions (Cont'd)

State	Agriculture	Home Economics	Mechanic Arts
Kansas (Cont'd)	Livestock Sanitation Forage crops Farm buildings and equipment Creamery management Creamery-butter making Market milk Dairy bacteriology Ice-cream and cheese making Judging dairy products Dairy mechanics and refrigerations		
Kentucky	Agriculture (general)	Course in dietetics for nurses only	None offered
Louisiana	Animal husbandry Dairying	Food clothing House decoration	Auto mechanics Farm mechanics Machine shop
Maine	General agriculture Dairying Horticulture Poultry management Farm crops Soils Gardening Veterinary science Agricultural chemistry Bacteriology Farm management	None offered	None offered
Maryland	Agriculture (No details of courses given)	Home economics extension service gives courses in: Clothing and food Household management House furnishings Landscape gardening Parliamentary law Millinery Home dairying Poultry Health	None offered

Subjects of Short Courses in Land-Grant Institutions (Cont'd)

State	Agriculture	Home Economics	Mechanic Arts
Massachusetts	Farm management Farm structures Dairying Animal husbandry Poultry Floriculture Horticulture Pomology Vegetable gardening	Public health Rural sociology Home making and related subjects in summer schools	
Michigan	General agriculture Dairy production Dairy manufacture Ice-cream makers course Horticulture Farmers' week Poultry Beekeeping Veterinary	None offered	Farm engineering Truck and tractor Graduate short courses in highway engineering and highway transportation
Minnesota	Veterinary Beekeeping Forestry Horticulture Dairying Boys' and girls' club work Editors' short course Summer training courses for agricultural teachers	Home nursing Home making	Boiler practice Steam fitting Plumbing and heating Ventilating, auto-motives Foundry practice Shop mathematics Electrical machinery Testing material Each course complete within itself and runs for 16 weeks
Mississippi	Farmers' short course	Under club work Home economics and agricultural short course	Junior farm mechanics

Subjects of Short Courses in Land-Grant Institutions (Cont'd)

State	Agriculture	Home Economics	Mechanic Arts
Missouri	Farmers' week Soils - Crops Animal husbandry Dairying Horticulture Farm management Rural economics Veterinary science Agricultural engineer- ing Poultry	Selection of food and clothing Preparation of food and clothing	
Montana	Agriculture Agricultural engineer- ing Agronomy Animal husbandry Dairy production Dairy manufacture Farm management Poultry husbandry	None offered	None offered
Nebraska	General agriculture Livestock judging and management Ice-cream making Poultry Grain grading Farm management	Dressmaking	Automobile tractors
Nevada	General agriculture Dairying	Foods Millinery Dressmaking Clothing Children's clothing	None offered
New Hampshire	Poultry Dairying Ice-cream manufacture		None offered

Subjects of Short Courses in Land-Grant Institutions (Cont'd)

State	Agriculture	Home Economics	Mechanic Arts
New Jersey	Agriculture (general) Dairy farming Poultry Fruit growing Market Gardening	None offered	None offered
New Mexico	None offered	None offered	None offered
New York	Agricultural economics and farm management Agronomy Animal husbandry Dairy industry Entomology Floriculture Forestry Plant breeding Plant pathology Pomology Poultry Vegetable gardening Veterinary medicine	None offered	Farm shop work Gas engines Farm mechanics Sewing machines Tractors Extension schools covering several other subjects
North Carolina	General farming Stock raising Vegetable growing Orcharding Use of implements and machinery Special courses for cotton, tobacco, and small grain farmers Poultry raising Cotton classing and the like		Discontinued all except meter men's short course
North Dakota	Farm husbandry Elevator management Grain grading Meat animals and draft horses Farm management Finances and marketing Dairying Forage crops Horticulture Grain crops Poultry Beekeeping Farm structures	Feeding, health, and sanitation Deserts Child care Meal service Home nursing Dressmaking Home millinery	Vocational engineer- ing and builders' course Automotive engineer- ing Tractors Operation and repair of all farm machines

Subjects of Short Courses in Land-Grant Institutions (Cont'd)

State	Agriculture	Home Economics	Mechanic Arts.
Tennessee:	General farming	Elementary cookery	Surveying
	: Animal husbandry	: Preparation of meals	: Highway engineering
	: Dairy-herd management	: Nutrition	: Electric meter repair
	: Creamery manufacture	: Preservation of foods	
	: Horticulture	: Elementary sewing	
	: Poultry	: Garment making	
		: Laundering-housework	
		: Gardening, health,	
		: and recreation	
Texas	Agriculture		Agricultural engineer-
	: Cotton marketing and		: ing
	: classing		: Textile engineering
	: Grain grading		
	: Veterinary		
Utah	Dairy manufacture	None offered	Irrigation and drainage
	: Agricultural economics		: Tractor operation and
	: Agronomy		: care
	: Animal husbandry		: Roads
	: Bacteriology		: Architecture
	: Botany and plant pathol-		
	: ogy		
	: Chemistry		
	: Dairying		
	: Entomology		
	: Horticulture or veter-		
	: inary science		
	: Beekeeping horticulture		
	: Farm machinery		
Vermont	Dairying		None offered
	: Testing milk and		
	: herd management		
	: Testing dairy plants		
	: Operation and manage-		
	: ment of dairy plants		
Virginia	Agriculture	Not fully organized	Road work
	: Courses for stockmen,	: Under direction of	: Machine shop
	: dairymen, and	: extension short	: Forge work
	: orchardists	: courses for club	: Foundry
		: members	: Electric wiring and
			: drafting
			: Printing - linotype
			: Mechanic arts

Subjects of Short Courses in Land-Grant Institutions (Cont'd)

State	Agriculture	Home Economics	Mechanic Arts
Washington	Dairying Berry and tree-fruit growing Marketing Commercial poultry	None offered	Engineering Mine surveying Automobile repair Assaying Ore testing
West Virginia	None offered	None offered	Coal mining
Wisconsin	Farmers' week Agriculture (general) Dairy courses Nurserymen's course	Farmers' week short course	Electric meter men
Wyoming	Agriculture (general) Poultry Dairying Beef and wool production	None offered	

The number of agricultural short courses offered in the different land-grant colleges varies considerably. The question may be raised as to the cause of this variation. Are the farmers in those States where the colleges offer no short courses except farmers' week no longer in need of systematic short courses of some sort? Perhaps there are other ways by which this service is being rendered. The extension service and the teachers of agriculture in the vocational high schools may be eliminating the need for short courses in such States. These agencies, according to some reports, are lessening the demand for the old type of short course.

Some of the land-grant colleges are offering more intensive as well as more extensive short courses than others. This may be due to one or more causes. The specialized types of farming of different kinds in a State may create a demand for a considerable number of short courses of an intensive character. In those States where the agricultural practice is less varied, the extension service may be able to give the kind of instruction needed by the farmers, who, therefore, will not desire to come to the colleges for more systematic instruction. On the other hand certain land-grant institutions may have succeeded in arousing interest in better methods of farming to such an extent as to create heavy demands on the colleges for short courses of various kinds.

In a considerable number of States now offering short courses of specialized subjects, there are those who believe that short courses should no longer be offered in general agriculture, but should be confined to the more highly specialized types of courses. The colleges have better facilities generally for offering the specialized courses than can be obtained remote from institutions.

Some States are far more active in offering short courses in home economics than others. Several of the larger land-grant institutions offer no short courses in this subject. Some institutions report that there has been no demand for the home economics short courses, others say that short courses formerly offered have been discontinued. One of the large institutions reports that the reason for not offering short courses in home economics is the lack of funds to employ the necessary teaching force to carry on the work. The lack of separation of home economics short-course work in a few States from girls' club work and home-makers' week, makes it difficult to determine the content of these courses. The home economics work of the extension service and the Smith-Hughes classes in the high schools may be meeting the needs of the States which are not finding it necessary to offer short courses at the colleges. There are a few statements to this effect.

Thirty-one land-grant institutions are offering short courses in mechanic arts. In some institutions there are a variety of such courses. It is evident that a considerable number of the colleges are rendering a broad service in this field. Although institutions in some States are offering a considerable number of short courses in the mechanic arts there are institutions in adjoining States which offer none. There are no available data to show what may be the cause of this condition or what agencies are rendering this type of service in the States where the short courses are not given. Courses in the trades and the industries conducted through the secondary schools may be offering such courses making it unnecessary for the land-grant colleges to offer them.

Aims

Agriculture.- Some colleges report that the aim of short courses is to give the student a comprehensive and detailed grasp of the fundamental principles of the subject and the practical application of these principles to the business side of the particular kind of farming in which he is interested and to better fit him to handle successfully the practical economic problems that are continually arising in the development and management of his business. Mention is made also of farmers' short courses, the purpose of which is to enable persons, especially those of mature years and experience, to acquire a knowledge of the fundamental principles of agriculture and of the results of the latest investigations in the production of fruit, field, and storage crops and livestock of various kinds.

A report from California reads: "It is our plan at the present time to offer only short courses pertaining to specific subjects. This is done in order to acquaint the farmers of the State with the latest development along the specific lines in which they are interested. The courses are open to anyone 18 years of age or over. We have done away with the courses in general agriculture due to the wide diversity of agriculture in this State and because we have had little or no response to such courses."

The aim of the one-year course as given by one institution is to meet the needs of those who can spend only one year at college, the only requirement for admission being a knowledge of the common-school branches. Other statements say that courses are offered, the purpose of which is to appeal to farmers who wish to increase their productive powers or to young men who expect to become farmers. Farmers' week is especially suited to the farm men and women of all ages who recognize their needs for some training in scientific agriculture and home economics, to enable them to use more effectively the practical knowledge they have already gained.

Another report of interest states that farmers' short courses or farmers' weeks are full of good things for busy farmers. These courses cover special subjects and are intended to give specific instruction of a more practical nature to enable those who have not the time to give to longer courses to get the latest scientific information of practical value to them on their farms, in their homes, and in other operations. This report goes on to say that the purpose has not been to reach large numbers of people in these special courses but to reach the progressive people, many of whom are leaders in their communities.

The aim of the farmers' short course offered at one institution is to give the student fundamental training in the sciences relating to agriculture and their application to the production of crops and livestock and to farming in general.

"Such a curriculum," says the report, "not only equips a man to become a successful farmer, but makes of him a better citizen and a leader in the broader duties of life. Many men who have chosen farming as their vocation and who are alive to some of the advantages offered by this institution to the farmers of the State are denied the opportunity of pursuing the college curriculum in agriculture for even one year. For such men the college provides the farmers' short course."

Another agricultural college says that the aim of the short course is to provide technical training in agriculture for young men who can not pursue the four years' course and also to provide facilities of this type to boys in several counties where at present there are no agricultural high schools. The last statement indicates that the agricultural courses in the high schools of this State are to some extent lessening the demand for short courses.

A rather unique type of short course was inaugurated at the Mississippi Agricultural College in September, 1923. This is called part-time instruction, the aim of the course being to offer college instruction to worthy young men who are obliged to earn a part or all of their expenses while attending college. Due to limited opportunity for profitable employment only 46 students could be taken. These were divided into groups of 23 each. Group one was assigned to class work for four weeks and group two to work on the college farm. At the end of each four-week period the groups were shifted.

The group attending classes is required to put in six hours per week per student in labor for the production of supplies for the part-timers' table, thus reducing the cost of board. The group engaged in farm work is required to attend class at night, thus keeping in touch with their studies and making some progress in them even while working full time in the field. For these part-time students the length of the session is 48 weeks, beginning September 15 and closing August 15. The report says that the plan has worked well so far. The students have made good programs and will have completed the work of the full college session on August 15. They are earning their expenses entirely. It is expected that a new group will be recruited this summer.

The aim of certain short courses at the same institution is to give county club boys and girls specific training in club objectives and some idea of what the college has to offer and some vision of the possibilities with reference to the uses of improved farm machinery and home equipment. Short courses are also offered to train home-economics agents in horticulture, dairying, poultry raising, and similar subjects.

Many students who pursue short courses are qualified to enter the regular college courses. One of the States reports that the aim of the short course is to provide training in agriculture in a short time and at low cost to those students who can not meet the entrance requirements of a regular college course. However, approximately 50 per cent of the students in the short courses at this institution are high-school graduates and could, therefore, meet the college entrance requirements. Another 25 per cent have had some high-school training and the remaining 25 per cent have only common-school training.

Cornell University reports that the aim of short courses is to give vocational training in agriculture, not of college grade, particularly for those who can not take a college course. The course is intended primarily for persons who are engaged in general farming or who expect to take up farming.

The North Carolina Agricultural College gives a short practical course in agriculture for busy farmers, open to all those engaged in or interested in different lines of farming, dairying, poultry raising, and fruit and vegetable growing. These courses will not, however, prepare students for any of the other regular courses offered at the college. They are especially designed to aid those, both old and young, who wish to become more modern and more businesslike in their particular lines of farming and to give an opportunity for the busy men on the farm to spend a week at the college studying the particular subject that will be of the greatest value to them.

The object of each of these courses is to better fit for life those who attend by aiding them in obtaining a more accurate understanding of their particular line of agriculture and in acquiring a higher skill, greater efficiency, and more knowledge in their chosen fields. The college feels it is offering probably the greatest opportunity to the farmers of North Carolina it has ever been privileged to offer.

The dean of the School of Agriculture of the North Dakota Agricultural College reports that the aim of short courses is to provide vocational instruction in agriculture to young men who expect to engage directly in agriculture and who must get their education in the winter months when work is less pressing on the farms and who either can not afford a college course or are not prepared to enter college.

Some colleges put a minimum age limit for entrance as well as a minimum standard of scholarship. One institution, for example, requires that applicants be at least 18 years of age at entrance, that students shall have completed the common-school branches at least, and that within three weeks after entrance they shall satisfy the teachers that they are sufficiently mature, earnest, and capable to warrant their remaining for the course. In order that seriousness of purpose as regards an agricultural occupation may be assured from those taking the course no student will be permitted to register for the second year's work who has not had at least six months practical farm experience on a farm. This experience should be obtained upon a farm making a speciality of the line of work which the student intends to follow.

Home economics.- Of the 23 land-grant institutions reporting short courses in home economics, 2 state that short courses are offered only in connection with farmers' week; 1 reports that short courses are given for nurses only; and 1 reports that home economics short courses will probably be discontinued after the present year.

Short courses in home economics, as in agriculture, give attention in many States to the young people's work. The Florida State College for Women reports that the aims of home economics short courses are: (a) To strengthen and standardize club work, (b) to encourage higher learning, (c) to develop leadership, (d) to stimulate interest in club work by awarding prize winning club girls with educational trips to the college, (e) to bring the girls in close touch with the college, and (f) to give farm women an opportunity to spend some time in study and recreation at the college.

A report from Purdue University says that the aim of short courses in home economics is to give home makers an opportunity to study scientific or new methods in house keeping and to furnish training for young women who expect to establish new homes but have not had home economics in public schools or colleges.

The Iowa State College reports that the aim of short courses in home economics is to provide opportunity for all girls or women over 17 years of age to receive practical help in solving home problems and meeting the responsibilities of the home maker.

The Kansas Agricultural College reports the aim of short courses in home economics as being to furnish special training in home making for young women who, from lack of time, are unable to take an extended course, the purpose being to give an understanding of sanitary requirements of the home, knowledge of values of home equipment, quick attention to details, judgment in buying, and adaptation of means to the end in view.

The home economics division of the University of Minnesota says the aim of short courses is to improve the standard of home making by adding new information or new skills to the old and by acquainting students with desirable standards for child training, the use of the budget, proper family diet, clothing for the family, recreation, economics, civic responsibilities, and the like.

Such short courses reported from other land-grant institutions are offered: (1) To teach housewives the main points in the selection and preparation of food and the selection and construction of clothing, (2) to prepare women 18 years of age and over to do the sewing for their family or for others in their own communities, (3) to give the home maker an understanding of good values and their application in feeding and clothing her family.

One institution reports a course in child training for the women of the city to study the psychology of child behavior, habit formation, and training in various ways. The same institution reports the aim of the home-decoration course as being to offer opportunity to study the remodeling of the house to meet the needs of the family and to study interior decoration. The short course in clothing is given to develop art, technique, and judgment in selection and making of clothing.

Another institution reports that a one-year home-maker course which was very popular a few years ago has been discontinued. The demand for the course came from girls, many of whom came from farm homes and had only a common-school education, while others were high-school and college graduates. The aim of the course was to prepare the girls for home making. This need has gradually been met in this State by the extension service, the Smith-Hughes part-time courses, and the high schools of the State. The report also states that the one-month short course in home economics, formerly attended largely by mature women whose husbands were registered for the one month course in agriculture which had large enrollments with considerable interest, has been discontinued since extension work and Smith-Hughes courses are meeting these needs.

In lieu of the home-maker course, a one-year course in institutional management is being offered, the aim of which is to give mature women who have had considerable experience in the business world or at home as broad a course as possible in one year to fit them for institutional management positions, such as directors of dormitories; heads of cafeterias, tea rooms, or large institutions; dietitians in small hospitals; and employees caring for food and housing problems in commercial establishments.

In reviewing returns from each of the land-grant institutions reporting, it is evident that some of the largest land-grant institutions are not offering short courses in home economics. These institutions usually refer to the work being done by the extension service in home economics. One of the larger institutions reports that no short courses in home economics have been offered for several years because of the increase in number of four-year college students, the appropriation not having increased fast enough to permit the employment of additional instructors for winter courses. It is the desire of this institution to reinstate the short courses in home economics as soon as conditions and finances will permit, because it is felt that such opportunity should be offered at the agricultural college to the home makers to pursue courses of a shorter period than the regular four years' course.

Mechanic arts.- Returns indicate a great variety of short courses offered in mechanic arts. Some colleges are seeing the opportunity to render service in a great many ways by means of short courses offered in this field. New demands are being made upon many of the colleges for courses in radio, simple architecture, applied electricity, automobile mechanics, road construction, gas and electric meter man, plumbing and heating, ceramic engineering, telephone practice, steel-treating foreman teacher training, blacksmithing, foundry practice, carpentry, and farm mechanics. The preceding subjects are taken from returns from several of the institutions where short courses in mechanic arts appear to be well organized.

The mechanic-arts colleges, like those of agriculture and home economics, endeavor to offer short courses of the types most in demand. There are no short courses in mechanic arts in a number of States which have many industrial centers and which have types of farming requiring considerable use of modern farm machinery. In one State where the industrial interest is quite highly developed, a short course in personnel management is offered, the aim being to instruct plant managers, superintendents, employment managers, and other officers in up-to-date methods of industrial organization and management.

In another State where the agricultural industry is the dominant interest, tractor courses are offered, the aim of which is to fit students for tractor road work, the tractor repair and garage work, and for the use, care and repair of farm machinery.

A report from one of the colleges located in a southern State says the aim of the textile engineering course is to prepare young men for responsible positions in cotton manufacturing.

The radio short course is to train students in radio operation and to educate them in the construction of radio receiving sets.

The purpose of a short course in architecture is to give office draftsmen of mature age an opportunity to get the theoretical side of architecture with instruction in design, modeling, and the like.

The course in applied electricity is to prepare men for work in power houses and electric repair shops and for work with electrical contractors.

The electric meter men's short course is to provide training in the testing, adjusting, and installing of electric meters, especially for employees of companies which can not provide such training.

The short course in ceramic engineering is to meet the requirements of practical men in the ceramic industry. The course deals with the principles underlying the work of managers, superintendents, burners, and others concerned with the manufacture of ceramic products.

The gas meter men's short course is designed to meet the needs of the men repairing gas meters, but should be interesting and instructive also to managers, engineers, and specialists in the gas industry.

The highway short course is to provide an opportunity for engineers and officials interested in the development of highways to study and discuss many of the problems on highway improvements, to promote cooperation and coordination in road work, and to stimulate greater fellowship among the personnel.

The short course in plumbing and heating is to give instruction in problems encountered in the design of plumbing and heating installations with a view particularly toward simplification and reduction of costs.

The one-week road school is planned with the hope of bringing together all the engineers, officials, contractors, and the like, who are interested in street and highway problems in order that they may have opportunity to meet and exchange ideas with each other.

The short course in telephone practice is offered for those interested in telephone operations and maintenance. The course affords the opportunity for managers of small exchanges, telephone-repair men, installers, and others engaged in telephone-plant work to obtain the benefit of an intensive course of instruction, which is of value to them in their daily work and which may be of value in helping them to gain advancement in the vocation.

The aim of the automobile-repair course is to supply the preliminary training for a person who expects to follow automobile-repair work. The course in auto operations is offered to supply such training as will enable the owner to properly understand and operate his car and to enable him to make minor adjustments and repairs.

The short course in carpentry is offered to give the necessary acquaintance with wood-working tools and their use in order to enable the worker to make more rapid progress in this occupation.

The purpose of the tractor-operation short course is to train tractor owners and operators in the efficient use of tractors and power machinery, including field repairs and general overhauling.

A short course is offered in farm mechanics to familiarize students with the construction, operation, and the possible uses of farm machinery. A statement from another institution says the aim of the automobile-tractor short course is to familiarize farmers who operate gas-engine tractors and automobiles with the fundamental principles of such machines and to make it possible for the farmers to locate troubles and do some overhauling and repair work.

One institution reports that short courses in mechanic arts have been offered from almost the beginning of the institution, the aim being to provide useful instruction to people of the State, and to give instruction in the mechanism of power machinery and its operation.

Character

Agriculture- Replies to the question regarding character of short courses in agriculture show considerable variation. Some States offer only short courses that pertain to special subjects, such as poultry, and dairying, with brief conferences on special subjects, such as the deciduous-fruit growers' conference and the viticulture conference held by the College of Agriculture of the University of California. This college reports further that courses in general agriculture have been discontinued, due to the wide diversity of agriculture in the State and also to the fact that there has been little or no response to such courses. Some of the special courses of from four to six weeks show that their character is rather intensive. A special course in poultry is divided into two parts. Part I consists of lectures, discussions, and management of a commercial poultry plant, with practice periods in the poultry plant. Part II is a practice course in incubation and brooding. This short course is offered along very definite lines.

A different kind of short course is the balanced curriculum course covering a period of six months for four years and equivalent to 15 high-school units. One institution reports a short course of 10 weeks for boys over 16 years of age and of grammar-school education. In each term about half the time is devoted to the special subject and half the time to related subjects.

Another type of short course is an abbreviated regular four-years' course in the same subject. Students do not pursue any except very general courses in the allied subjects and in the Liberal Arts College. Almost 80 per cent of the student's work is in technical agriculture.

The following are typical as regards the character of short courses:
(a) Lectures, demonstrations, laboratory; (b) program built to meet special needs; (c) simple and practical; (d) practical work in laboratory and classes;

(e) practical, closely related to current practices; (f) vocational; (g) subcollegiate; (h) elementary; (i) instructional and recreational, special attention to boys' and girls' club work. A few references are made to unit courses of instruction with a definite vocational tendency.

Mention is also made of short courses consisting of vocational training in agricultural subjects plus fundamental subjects such as civics, elementary mathematics, and English, to better give students all around education. The courses are practically all subcollegiate in character and with one or two exceptions no mention is made of using the short course in lieu of high-school courses for college entrance requirements.

Home economics.- Home economics short courses are less in number than such courses in agriculture, which is doubtless due to the more recent development of home economics courses in the land-grant institutions. The character of these courses indicates that some of these colleges are giving attention to courses that will serve those who can not attend college for long periods. Girls' club work is an important part of home economics short courses in some States. Girls are divided into groups according to ages and given courses in home improvement, poultry, food preparation, food conservation, clothing, nutrition, horticulture, health swimming, and physical culture. Practical work is emphasized and the county club demonstrations frequently consist of daily demonstrations by county club teams. One home-improvement course consisted in working over all furniture, floors, walls, and furnishings in an old typical rural home located near the college. The organization of a State home demonstration council is reported under which courses are offered in home improvement, food conservation, nutrition, poultry, basketry, millinery, and making of inexpensive gifts, with lectures and demonstrations on various other subjects of interest to women. One institution reports that short unit courses are offered in those subjects for which the home maker has expressed a desire for help. Applied design, handicraft, costume design, garment construction, millinery, principles of cookery, meal planning and preparation, marketing, food preservation, home management, planning, and furnishing are the units mentioned. These courses are planned so as to make the lecture and laboratory work of a popular, rather than of too scientific a nature.

One of the States reports a junior short course for girls and one for rural women of the State, both being held at the university under the direction of the extension division. The women are classified according to the number of years they attend the course which consists of demonstrations and lectures in subject matter. The women are divided into groups 1, 2, 3, and 4, each having a class period. The lectures for the freshman group will be retained for this group for four years. At the end of four years a commencement will be held, and a certificate will be given those who have attended the short course four years.

The character of other short courses is shown by the following summary of their work: (a) Lectures, demonstrations, discussions, laboratory, luncheons, plays, and supervised recreation; (b) girls' club work; (c) meal planning and preparation and sewing; (d) theoretical and laboratory work in dressmaking 15 hours per week, design as related to dressmaking 6 hours per week, English 5 hours per week, food in relation to health 4 hours per week; (e) discussion on needs of the body and on foods supplying these needs; (f) malnutrition, hot school lunch, processes of cookery and table service; (g) all phases of home making with concentrated efforts on the manipulative processes, some stress being placed on the scientific aspects, particularly feeding, health, and sanitation; (h) as much science and business training as possible, in addition to the technical work.

One home economics department reports conference lasting one week each spring for the home economics teachers of the State. If these teachers desire to complete a two or four credit, they may have a special program planned in the form of a research problem.

Mechanic arts.- The various returns from land-grant institutions with regard to short courses in mechanic arts indicate that the courses are of a specialized character such as would train students to become more efficient in certain lines of mechanical work. However, the work is not always confined to mechanics. Mathematics and English courses are mentioned as constituting a part of the mechanics short course in some institutions. The majority of the reports show that there are no rigid requirements for entrance to the courses. However, there are instances where the courses are of college rank, depending upon the nature of the course.

For one course in architecture the applicant must have spent three or more years in an architect's office and must be 20 years of age. No degree is given. Lectures, demonstrations, and laboratory work, covering fundamentals of electric circuits and the principles underlying the operation of meters and special meter appliances comprise the character of short courses in one institution. One short course in highway engineering consists of lectures by specialists from the division of highways, county superintendents of highways, and others of note in this field. One of the land-grant institutions gives the following specific information regarding the character of short courses there:

"The short course in farm shop work consists of good practical work with enough preliminary demonstration and discussion by the instructor in charge to make clear the reasons for things. Care of tools includes saw filing, polishing rusty tools, sharpening edge tools, constructing tool cabinets. Exercises are given covering construction of objects needed by men in productive farm work.

"Short course in farm mechanics. The course is much like a regular university course with two lectures and one laboratory period each week except that in the lectures there is less emphasis on theory and more on practical procedure. Every report is made to call forth individual initiative and to develop in each student ability and confidence to think for himself.

"Extension short course in sewing machine schools. In the morning a group of women, not less than 10 or 15 bring their machines to the place of meeting. Under the supervision of the instructor each woman does the work on her machine. The morning is devoted to cleaning and oiling of the machine. During the afternoon adjustments are made until the machines stitch perfectly. Following this a discussion of various sewing-machine troubles, their causes and remedies is conducted by the instructor."

Short courses in textile industry are offered in a few of the southern land-grant institutions to young men 18 years of age or over who have worked in a mill not less than one year. These courses are below college grade and are largely practical in character. A course in textile engineering is also offered, the character of the work being of a grade corresponding to the first two years of college work. The entrance requirements are the same as for the four year courses. This course includes some mathematics, English, and chemistry with a considerable amount of textile engineering work.

A dean of one institution opposes short courses and makes a statement as follows:

"Our experience with short courses conducted after the war convinced us that the presence of short-course students on the campus was demoralizing and tended to lower the standard of work of the four-year curricula. Short-course students are interested in nothing but bread and butter subjects and have no sympathy with our desire to give engineering students a cultural background for their professional work. Being men of relative maturity and strength of character their ideas tend to influence the attitude of the regular engineering students. With little outside study to do, the short-course students had much time on their hands in the evening and were always trying to tempt the regular engineering students to waste their time. The faculty was a unit on discontinuing the short courses, and there is no thought of reviving them."

Duration

The following facts relate to short courses in general in the three divisions of work. Twenty-five of the land-grant institutions offer short courses of from one to two years. Thirteen report two-year short courses in agriculture, twenty-three report courses of from one to three months, 16 report short courses of from one to four weeks. Five institutions report short courses of one and two years in home economics, 14 report short courses of from 1 to 15 weeks. There are 8 institutions reporting short courses in mechanic arts from 1 to 2 years and 12 reporting short courses from 1 to 15 weeks in length.

Six land-grant institutions designate short courses of less than 1 year in length in terms of months, 14 designate them in terms of weeks, as 8 weeks or 12 weeks, instead of months. Few institutions indicate clearly the difference between extension meetings and conferences held in the States remote from the college and short courses conducted on the college campus.

Agriculture.- Of the 46 colleges reporting short courses in agriculture, 14 returns show that these courses vary in length from 1 to 4 years. Four of these institutions designate short courses in agriculture in terms of months, while 30 designate them in terms of weeks, the length of the courses extending from 1 to 22 weeks. Six of the institutions designate short courses in terms of days, the length varying from 1 to 10 days. Frequently the institutions refer to short courses as 5 months each for 2 years or 2 weeks each for 2 years. There is a tendency on the part of a considerable number of land-grant institutions to favor shortening the length of such courses. One institution reports that only short courses of comparatively short duration and which pertain to some specific subjects are being offered. The enrollment seems to increase with the decrease in the length of the short course. This is doubtless due to the fact that it is very difficult for farmers to get away from their business for long periods. Farmers are willing to attend for short periods to hear of the latest developments in the lines of work in which they are primarily interested. This attitude is probably taken by farmers in many other States especially during periods when there is a scarcity of labor on the farms.

Home economics.- Of the 42 institutions reporting short courses in home economics, only 4 report 1 to 2 year courses. Over half of the colleges report courses varying in length from 1 to 13 weeks. Three reports mention courses of from 1 to 10 days. In several institutions home economics short courses give considerable attention to young people's organizations, such as girls' clubs.

Mechanic arts.- The length of short courses varies from one week to three years in mechanic arts. One institution reports five winter short courses for five years. There are conferences ranging from one to three days, sometimes called short courses.

Changes

Agriculture.- Thirty-four replies to this question were received, of which 22 report that no changes in short courses are contemplated. A limited number of the colleges reported that changes will be made to meet new conditions. Because of an increase in the number of high schools in the rural districts offering one and two years training only, provision has been made in the course of study at the Colorado Agricultural College to permit students to complete their requirements for college.

Georgia reports that camp features have been added to short courses with an attendance of 1,300 students.

Idaho has reduced the length of short courses from 3 to 2 years and from 20 to 16 weeks each year.

Michigan has been making some reductions in the length of short courses. A post-graduate veterinarian course of one weeks' duration and a beekeepers' course of two weeks' duration have been added. The eight weeks' course during two years has been changed to a one-year course of eight weeks.

Montana reports that short courses have been organized on a unit basis and the three years' course changed from six months to three months each year.

Tennessee has reorganized short-course work so as to give students a greater variety of courses.

Home economics.- Returns show that the home economics short-course work is undergoing no material changes. One State reports that several sections of home economics short courses are now conducted where formerly there was only one section. Short courses were formerly held while the college was in session and college girls assisted with the classes and helped entertain. Crowded conditions made it necessary to hold short courses during cessation of regular college activities. Several States report that certain changes are being made, and new courses are added only as new problems arise and show need of solution. Other reports state that some of the home economics departments are endeavoring to locate problems of the farm home and are making studies to determine the best method for their solution. Many of the reports, however, are more or less indefinite.

Mechanic arts.- Practically all the replies to this question state that no particular changes in short courses in mechanic arts are contemplated, except as the occasion for certain changes may arise. One institution reports a change to shorten the course to four days so that the extension staff may be able to conduct one course each week and have time between courses to clean up the work at one place, move to a new location, and get organized. There is greater demand for electrical work in the short course in automobile repairing. There may be certain types of short courses in farm shop work where the technique and procedure of the course have been well tried and established; and therefore, no need of material change is necessary. One report on short courses in farm mechanics says that no change is contemplated except to constantly keep making the courses more practical without losing sight of the fact that it is necessary to give reasons for things. The last statement shows that even in courses where manipulative and practical skill plays so large a part, instructors are using the opportunity to develop the thinking process, as well as developing skill among farm boys. It is the desire of the institutions to give considerable latitude to students in the selection of short courses and at the same time to offer students the opportunity to acquire the latest and most recent developments in the course of their choice. To this end the tendency is to organize the short course in units. This affords opportunity to make the instruction definite and complete.

Present Status

Agriculture.- Returns show that some land-grant institutions are giving special attention to short courses. In certain institutions the enrollment is large and apparently on the increase, while others report small attendance with prospects of decreases. In the institutions reporting large enrollments of short-course students it is possible that extension short-course students are included with the number attending regular short courses at the colleges.

California reports 1,749 students in the various short courses in agriculture with prospects satisfactory. Colorado does not give the enrollment in short courses, but reports the enrollment to be gradually declining. Connecticut reports 50 to 60 short-course students with the demand remaining constant. Florida reports that short-course students comprise 17 per cent of the total enrollment, but at present the number is decreasing. Georgia reports 3,428 boys in attendance at short course with interest increasing. Illinois reports 550 short course students. Indiana reports 63 students taking short courses and 1,200 attending farmers' short courses. Minnesota reports 1,218 attending the farm home-makers week with 81 students taking horticulture, 18 cereal chemistry, 32 forestry, 21 beekeeping, 74 editorial courses, 117 veterinary, 75 dairy, and 432 attending boys and girls courses. Other States report short-course students as follows: Kentucky over 100; Massachusetts 152, with prospects decreasing; Michigan 225; Mississippi 325, with prospects good; Missouri 100; Nebraska 91, with prospects good; New York 240, with the number decreasing; North Carolina 120; North Dakota 36; Oklahoma 226, with prospects increasing; Pennsylvania 180; South Dakota 175, with prospects favorable; Texas 36; Washington 144. The remaining reports on this topic give from 10 to 100 students with enrollment declining, due to lack of interest generally. This is not an encouraging outlook.

Home economics.-- Only 13 States reported on this question. In Colorado enrollment has been gradually on the decline due to the increased number of consolidated schools and particularly the number of high schools teaching home economics. Florida reports an increase in attendance with much interest and an enrollment of 184. Georgia reports 116 students with the number increasing. Indiana and North Dakota report enrollment decreasing. Iowa expects a constant increase in students. Kansas reports 15 students with enrollment decreasing. Other States report number of students as follows: Minnesota 129; Missouri 6 to 8 per year; Nebraska 9; Nevada 16; and Oklahoma 87. Oregon reports 6 to 12 demands per year from mature women.

Mechanic arts.-- Seventeen States reported on the status of short courses in mechanic arts. The character of equipment necessary for conducting certain kinds of short courses in mechanic arts requires that students come to college for a definite period of time in order to have the opportunity to do the practical work, much of the instruction of this character being given in the laboratories and in the shops. There are many types of short courses in mechanic arts, which can be conducted at certain centers in the States and particularly on the farms if the courses pertain to farm shop work or farm machinery. The nature of the courses in many localities would in all probability mean rather small enrollments.

The largest enrollment reported by any of the institutions in short courses in mechanic arts was that of Iowa with a total of 1,727. Indiana reports an enrollment of 1,568. No information is available to show whether all were enrolled at the institution or not. Perhaps some were enrolled at community center courses remote from the institution. California reported 1,000 students enrolled in short courses with the

statement that if the institution attempted to care for the demand for this work it would require the entire time of all the extension specialists. This is due in part to the fact that farmers in California make such extensive use of tractor power. Mississippi reported 325 students, with future prospects promising. North Dakota reported 107 students, saying that there has been a decline in attendance since 1920 due doubtless to short crops and financial losses during the past five years. South Dakota reports 24 students with prospects for an increase in attendance. The other States replying to this question reported short-course students as follows: Tennessee 32, Texas 50, Washington 12, West Virginia 47 and Wisconsin 60.

Proposed Development

Agriculture.- Sixteen of the institutions reporting state that no new plans for the development of short courses have been formulated. It is evident, however, that some of the institutions are giving considerable attention to a reorganization of the short-course programs. One institution is contemplating placing short courses under extension work. Another reports that the future development is doubtful and that the original purpose of agricultural short courses has been taken over by the Smith-Hughes schools, but as yet the institution feels justified in continuing the work. Some States report that other courses are to be added, for which new appropriations will be asked. There are statements to indicate that the institutions are constantly aiming to make the courses more practical and at the same time make this type of work as extensive and as efficient as conditions will permit in order to reach larger numbers of farmers. One institution proposes organizing State camps for adult farmers. Plans are being developed by certain institutions to make the length of the term of these courses shorter with emphasis placed more on the specialized type of short courses in which local farmers are particularly interested. One institution reports that additional courses are to be given dealing with community organization, recreation, and the development of leadership. A report from another of the institutions states that the entire farm-husbandry curriculum is in the hands of a committee at the present time with instructions to revise the same to make it meet present needs more completely. The revision will probably include: (a) introduction of elective subjects; (b) more insistence upon lecture demonstrations and less upon formal lectures; (c) general revision of laboratory instruction; (d) reduction of required subjects; (e) introduction of courses in control of insect and disease pests, beekeeping, crop grading, combination of courses in crops and soils. One institution reports that short courses will probably be discontinued for 1924-25 but gives no reason. In another institution the report says that short-course programs are being built up to extend through several years of work. An instance is reported of an institution which is planning to increase the attendance in the commercial-creamery short course through cooperation with the extension forces and the commercial creameries of the State. The reports say that most of the county agents are interested in helping to increase the enrollment of short courses, because it is desirable to have in each county a fairly large number of farmers taking short courses at the

agricultural colleges at different times. Such a system would obviously facilitate the development of contact between farmers and workers at the institutions and the extension forces throughout the States.

An interesting report is given by one of the institutions which has developed a series of summer educational conferences in the form of short courses, particularly for those furnishing material to farmers and those buying products from farmers. Conferences have been held for fertilizer dealers, feed dealers, seed dealers, and bankers, lasting three days with programs to which both the college staff and the guests contributed. Neighboring States are following this lead and are developing conferences with feed dealers. In conclusion the report states that these conferences have proved one of the most successful pieces of work inaugurated.

Home economics.- A limited number of institutions submit some information with regard to further developments of short courses in home economics. One institution reporting on the short courses in girls' home demonstration club work says that further development of demonstration teams is planned. Scholarships are offered at one institution to those who have completed a year's work and are trainers in county contests in home demonstration short-course work. It is expected to develop the attendance and to determine the type of courses to give through county and State channels of home demonstration workers. Women's clubs are to be encouraged to give scholarships just as they do for the girls' work. Pending the clarification of the territory to be covered under the Smith-Hughes high and part-time schools, the Smith-Lever extension schools, and the like, one institution reports that little or no advancement is being planned for the short course. When definite plans are developed preventing overlapping of the work and unnecessary expenditure of money, the short-course program will either be further developed or discontinued. It is evident from the above statement that a clear understanding of the function of these agencies has not been reached. The specific function of each of these agencies should be well understood in order to accomplish the best results with the least possible duplication of work.

Mechanic arts.- The majority of replies to this question say that no changes are contemplated; that short courses have been developed through years of experience, and that but slight revisions are made from time to time as needs arise. There are some evidences of new developments. One institution is planning to make the course in automobile repair broader and to emphasize the importance of more thorough training by encouraging students not only to spend more time in the automobile shop, but to take work in the machine shop, blacksmith shop, drafting room, and other closely related work. A report from one institution states that in the development of vocational courses the plan is to permit specialization in the subjects that give opportunity for business application, such as magneto repair, auto electricity, including storage battery repair, and the like. Another institution reports that it is planned to change the course in personnel management to cover economics only and to endeavor to have utility companies send minor employees for intensive instruction. A few of the institutions

are finding it undesirable to offer subcollegiate work and are, therefore, developing the collegiate type of short course in engineering. Some statements indicate that depressed agricultural conditions seem to have had their effect upon plans of development of new short courses in mechanic arts, as much as this type of work is affected both directly and indirectly by the ability of the farmers to repair or purchase farm implements.

Comments or Suggestions by the Colleges

In the last question representatives of the land-grant institutions were asked to make any comments or suggestions believed to be of importance in connection with this study. Many of the institutions made no reply to this request, but there were some statements made which the committee believed to be timely and worthy of consideration. A report from one institution says that there is still a need for vocational courses below collegiate rank that is not fully met by Smith-Hughes schools. It looks, however, as though the college would gradually be relieved of this work. According to a statement from another institution there have been very great fluctuations in the demands for short courses. The report says further, "We consider that our extension work now gives the opportunity for the equivalent of short-course work to many farmers and their children who otherwise would be interested in short courses offered at the agricultural college."

Statements from the various institutions show conclusively that some are placing more emphasis on short-course work. One institution reports that approximately 3,500 short-course students are operating farms in that State and that short courses are considered one of the best projects.

There are those who feel that the old-type short winter course in general agriculture is no longer necessary. Some institutions report that they are finding that short courses of instruction of one or two weeks dealing specifically and intensively with a certain definite phase of agriculture appeal more strongly to the adult farmers as well as the younger students. Short courses, says another report, can do much to extend the services of the agricultural colleges to the farmers of the States through the operation of one, two, and three weeks' courses offered at the proper time and dealing with very specific problems.

This thought believed worthy of consideration is offered by one of the deans who says that short courses, as we now conduct them, are of very great value, particularly for young men directly engaged in farm work. They offer convenient try-out places for methods of instruction for which the regular four-year course gives too little freedom.

Quite in conflict with this is a statement from another dean of agriculture who says, "It is my judgment that the short course has served its great purpose, certainly in this State. I do not see any large future for it. The agricultural courses in the high schools have, to quite an extent, taken its place."

Many of the home economics group, like the agricultural group, are of the opinion that short courses should be of shorter duration, very specific, and made to reach as many women as possible.

One home economics teacher reports: (1) That such courses can be made more attractive by having the day, the hour, and the length of the class planned to meet the greatest convenience of the home maker; (2) courses should be short and specific so that the home maker may know whether or not the particular unit will give her the help she needs; (3) subject matter should be carefully selected and organized so as to give the home maker good returns for the time she puts in; (4) teachers of home makers short courses should have a background of successful practical experience in the subjects they teach, a personality attractive to older women, ability to appreciate the home makers point of view.

There are a few statements to the effect that short courses in home economics in the past have served a real need, but that their day is really past and that other agencies nearer by are taking care of most of the needs of this kind of work.

Only a limited number of suggestions are offered regarding short courses in mechanic arts; but since this is also a field of varied interests, it is felt that contributions from at least a few of what are apparently among the best organized institutions for this work should be of interest.

One institution reports that the type of short course to be offered under the direction of the engineering division of the land-grant college depends upon the location of such institution. In all cases, says the report, duplication of the work of other agencies, such as secondary and trade schools, should be reduced to the minimum. In industrial centers short courses and conferences of distinct value to industries and utilities are most beneficial. Perhaps all of the land-grant institutions would agree that the type of short courses are somewhat dependent upon locality. One report states that it is a debatable question as to whether the present four-year land-grant college is the best place for short-course development, but that at present a great service may be performed through the development of intensive courses in skills connected with the building craft.

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